What is claimed is:

1. An isolated polypeptide selected from the group consisting of:

(i) an isolated polypeptide comprising an amino acid having at least 95% identity to the amino acid sequence of SEQ ID NO:2 over the entire length of SEQ ID NO:2;

(ii) an isolated polypeptide comprising the amino acid sequence of SEQ ID NO:2,

(iii) an isolated polypeptide that is the amino acid sequence of SEQ ID NO:2, and

(iv) a polypeptide that is encoded by a recombinant polynucleotide comprising the polyncleotide sequence of SEQ ID NO:1.

2. An isolated polynucleotide selected from the group consisting of:

(i) an isolated polynucleotide comprising a polynucleotide sequence encoding a polypeptide that has at least 95% identity to the amino acid sequence of SEQ ID NO:2, over the entire length of SEQ ID NO:2;

(ii) an isolated polynucleotide comprising a polynucleotide sequence that has at least 95% identity

over its entire length to a polynucleotide sequence encoding the polypeptide of SEQ ID NO:2;

(iii) an isolated polynucleotide comprising a nucleotide sequence that has at least 95% identity

to that of SEQ ID NO:1 over the entire length of SEQ ID NO:1;

(iv) an isolated polynucleotide comprising a nucleotide sequence encoding the polypeptide of SEQ ID NO:2;

(v) an isolated polynucleotide that is the polynucleotide of SEQ ID NO: 1;

(vi) an isolated polynucleotide of at least 30 nucleotides in length obtainable by screening an appropriate library under stringent hybridization conditions with a probe having the sequence of SEQ ID NO:1 or a fragment thereof of of at least 30 nucleotides in length;

(vii) an isolated polynucleotide encoding a mature polypeptide expressed by the tdk gene comprised in the *Streptococcus pneumoniae*; and

(viii) a polynucleotide sequence complementary to said isolated polynucleotide of (i), (ii), (iii), (iv), (v), (vi) or (vii).

3. A method for the treatment of an individual:

(i) in need of enhanced activity or expression of or immunological response to the polypeptide of claim 1 comprising the step of: administering to the individual a therapeutically effective amount of an antagonist to said polypeptide; or

(ii) having need to inhibit activity or expression of the polypeptide of claim 1 comprising:

(a) administering to the individual a therapeutically effective amount of an antagonist to said polypeptide; or

(b) administering to the individual a nucleic acid molecule that inhibits the expression of a polynucleotide sequence encoding said polypeptide;

(c) administering to the individual a therapeutically effective amount of a polypeptide that competes with said polypeptide for its ligand, substrate, or receptor; or

(d) administering to the individual an amount of a polypeptide that induces an immunological response to said polypeptide in said individual.

4. A process for diagnosing or prognosing a disease or a susceptibility to a disease in an individual related to expression or activity of the polypeptide of claim 1 in an individual comprising the step of:

(a) determining the presence or absence of a mutation in the nucleotide sequence encoding said polypeptide in an organism in said individual; or

(b) analyzing for the presence or amount of said polypeptide expression in a sample derived from said individual.

5. A process for producing a polypeptide selected from the group consisting of:

(i) an isolated polypeptide comprising an amino acid sequence selected from the group having at least 95% identity

to the amino acid sequence of SEQ ID NO:2 over the entire length of SEQ ID NO:2;

(ii) an isolated polypeptide comprising the amino acid sequence of SEQ ID NO:2;

(iii) an isolated polypeptide that is the amino acid sequence of SEQ ID NO:2, and

(iv) a polypeptide that is encoded by a recombinant polynucleotide comprising the polynucleotide sequence of SEQ ID NO:1,

comprising the step of culturing a host cell under conditions sufficient for the production of the polypeptide.

6. A process for producing a host cell comprising an expression system or a membrane thereof expressing a polypeptide selected from the group consisting of:

(i) an isolated polypeptide comprising an amino acid sequence selected from the group having at least 95% identity

to the amino acid sequence of SEQ ID NO:2 over the entire length of SEQ ID NO:2;

(ii) an isolated polypeptide comprising the amino acid sequence of SEQ ID NO:2;

(iii) an isolated polypeptide that is the amino acid sequence of SEQ ID NO:2, and

(iv) a polypeptide that is encoded by a recombinant polynucleotide comprising the polynucleotide sequence of SEQ ID NO:1,

said process comprising the step of transforming or transfecting a cell with an expression system comprising a polynucleotide capable of producing said polypeptide of (i), (ii), (iii) or (iv) when said expression system is present in a compatible host cell such the host cell, under appropriate culture conditions, produces said polypeptide of (i), (ii), (iii) or (iv).

7. A host cell or a membrane expressing a polypeptide selected from the group consisting of:

(i) an isolated polypeptide comprising an amino acid sequence selected from the group having at least 95% identity to the amino acid sequence of SEQ ID NO:2 over the entire length of SEQ ID NO:2;

(ii) an isolated polypeptide comprising the amino acid sequence of SEQ ID NO:2;

(iii) an isolated polypeptide that is the amino acid sequence of SEQ ID NO:2, and

(iv) a polypeptide that is encoded by a recombinant polynucleotide comprising the polynucleotide sequence of SEQ ID NO:1.

8. An antibody immunospecific for the polypeptide of claim 1.

9. A method for screening to identify compounds that agonize or that inhibit the function of the polypeptide of claim 1 that comprises a method selected from the group consisting of:

(a) measuring the binding of a candidate compound to the polypeptide (or to the cells or membranes bearing the polypeptide) or a fusion protein thereof by means of a label directly or indirectly associated with the candidate compound;

(b) measuring the binding of a candidate compound to the polypeptide (or to the cells or membranes bearing the polypeptide) or a fusion protein thereof in the presence of a labeled competitor;

(c) testing whether the candidate compound results in a signal generated by activation or inhibition of the polypeptide, using detection systems appropriate to the cells or cell membranes bearing the polypeptide;

(d) mixing a candidate compound with a solution comprising a polypeptide of claim 1, to form a mixture, measuring activity of the polypeptide in the mixture, and comparing the activity of the mixture to a standard; or

(e) detecting the effect of a candidate compound on the production of mRNA encoding said polypeptide and said polypeptide in cells, using for instance, an ELISA assay.

10. An agonist or antagonist to the polypeptide of claim 1.

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Claims

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Level – 2
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